IWAKI AIR EUROPE

TC-X Series

Air-Operated Double Diaphragm Pumps

IWAKI
The Heart of Industry

Presenting TC-X Double Diaphragm Pumps

We have been producing a large range of Air Operated Double Diaphragm Pumps in Japan since 1978 and now offers a huge line-up of standard & customized pumps available in many different sizes & materials.

All TC-X pumps are specifically designed to be used in process type liquid transfer applications and offer various engineered design features enabling efficient high performance liquid transfer & high operational reliability. They can be easily and quickly serviced and maintained even without pulling the pump from the process line. All serviceable wear components are modular and fully replaceable offering simple low cost replacement over a long lifetime of use.

Due to their engineered design, and due to the specific utilization of modern high tech materials, all TC-X pumps can be operated without the need for Air Line Oil or Grease Lubricants. They therefore offer safe, clean zero emissions pump operation, protecting people, processes and work environments from dangerous airborne vaporized contaminants.

The new generation Looped C® Spool and the third generation Coil-Spring Air Valve offer much improved pumping performance, air consumption, operational reliability & reduced maintenance. Pumps fitted with the new patent pending Air EcoRing offer on average, 16% better air consumption figures without any negative effects to overall pumping performance.

All pumps incorporate independent high performance Pilot Valves for unrivalled reliability and high speed short stroke operation. TC-X pumps utilize large diameter air porting and will resist stalling and resist freezing in nearly all conditions. They have leak resistant design features such as; fully bolted construction, machined liquid mating surfaces and registered fit body assembly. All TC-X pumps are fully torqued and rigorously tested prior to shipment.

ISO 14001 JQA-EM4848 ISO 9001 JQA-1173

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Diaphragm Pump Capabilities

Dry Run
Diaphragm Pumps can Run Dry for extended periods with no damage to the pumps moving parts. Also when running dry the pump will not overheat.
#1 Dry running pumps will speed up and will consume higher amounts of air.
#2 Dry Running can negatively affect the life of PTFE Diaphragms.

Transfer Solids
Due to their unique design, liquid slurries as well as large sized solids such as beads, stones etc. can be pumped with ease.
#1 the allowable solid size is different for each pump and is determined by the ball valve dimensions.
#2 Abrasive slurries can be pumped however care should be taken that the wetted materials of construction are abrasion resistant.

Variable Flow Rates and Discharge Pressure
By adjusting either the air regulator or a liquid discharge valve, it's possible to operate the pump anywhere between 0 liters per minute to full capacity. Liquid discharge pressure can be adjusted from less than 1 bar up to 8.4 bars, on some larger pumps.

Dead Head
A Diaphragm Pump can run against a semi closed or fully closed liquid discharge valve "Dead Head" without damage or wear to the pump. Therefore the Discharge Line may be closed fully at any time and even closed repeatedly. There will be no Power consumed, no Temperature increase and no damage to the pump, it will simply stop.
#1 Discharge Pressure cannot exceed Air Pressure so there is no need for a Pressure Relief System.

Self-priming
Diaphragm Pumps can operate dry and they also generate relatively high Vacuum Pressure, thus allowing the pump to Self-Prime.
#1 There is no need to use special mechanisms, equipment or special startup procedures to prime the pump.
#2 Pumps can operate both wet and dry and can self-prime repeatedly without damage.

Safety Transfer Flammable Materials
Diaphragm pumps are operated by compressed air and do not have any kind of electrical connections. They cannot overheat and they are cooled naturally during operation by the supply of compressed air. When correctly earthed, they are considered safe to use when pumping flammable liquids or when used in Explosive Environments.

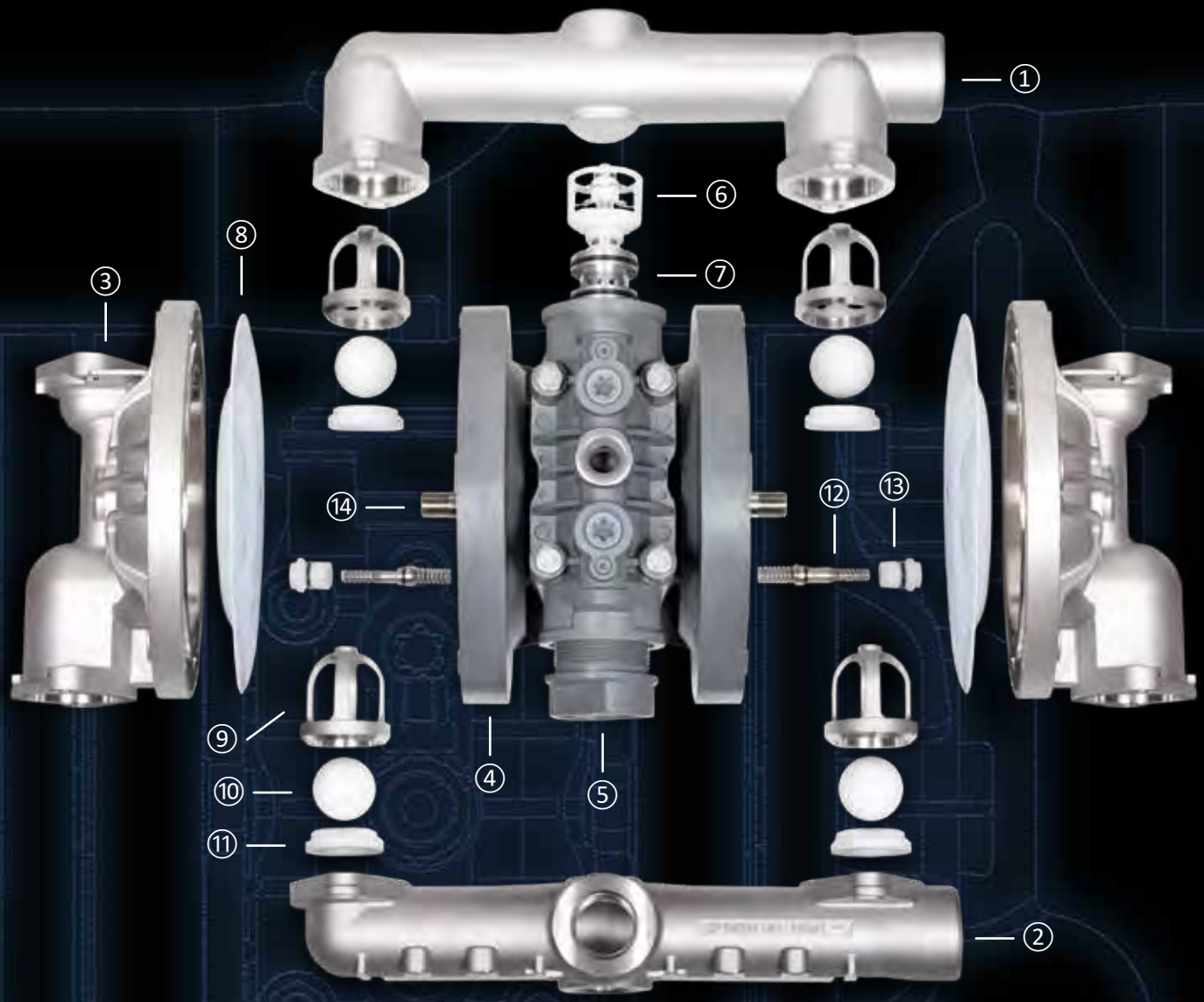
Made in Japan
All IWAKI Air Pumps are designed engineered and manufactured in Japan. Every pump is torqued and tested prior to dispatch to ensure correct performance and optimal leak proof operation.

The Looped C® Spool
The new Looped C® Spool offers improved switching reliability and longer parts life expectancy. The Looped C® Spool has fully replaceable Seal Rings and a new lightweight Shaft. The Sleeve has been redesigned offering increased wear resistance and increased surface smoothness. Spool & Sleeve are both outside accessible and completely Non-lubricated.

The Air EcoRing
When installed can decrease actual Air Volume requirements by up to 25% with no decrease in liquid low rates. (Compared to an old equivalent model pump. (Average 16%).

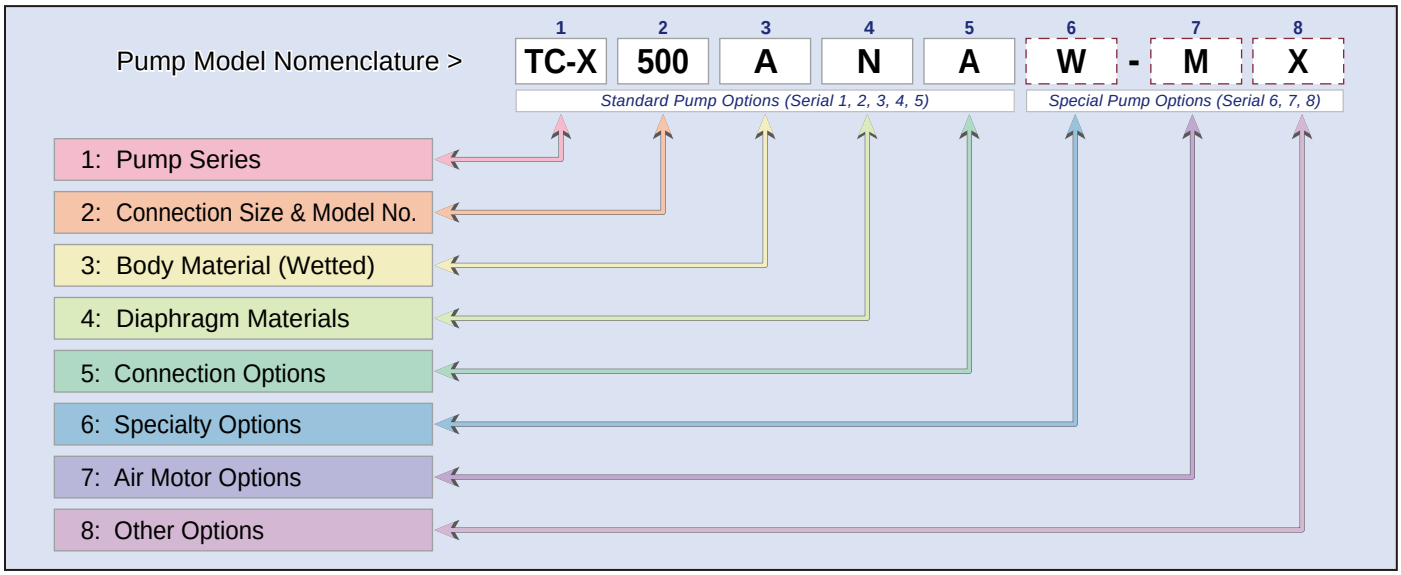
NEW Threaded Flange Manifolds
The manifolds for the type 400,500 and 800 standard metallic pumps are modified to the newly designed "threaded flange manifolds".
This provides customers a wider option of both flange and thread connection availability.

Diaphragm Pump Structure



① Out Manifold
② In Manifold
③ Out Chamber
④ Body Assembly
⑤ Main Valve Assembly
⑥ C Spool Assembly (Looped C®)
⑦ Sleeve Assembly
⑧ Diaphragm
⑨ Valve Stopper
⑩ Ball Valve
⑪ Valve Seat
⑫ Pilot Valve Assembly
⑬ Pilot Valve Seat
⑭ Center Rod

TC-X Pump Model Code Nomenclature



1: Pump Series

TC-X: Standard Pump Series

2: Connection Size & Model No.

030 =	5mm (¼")
031 =	5mm (¼")
050 =	5mm (¼")
051 =	5mm (¼")
101 =	10mm (⅜")
152 =	15mm (½")
200 =	20mm (¾")
250 =	25mm (1")
400 =	40mm (1½")
500 =	50mm (2")
800 =	80mm (3")
100 =	10mm (⅜")
150 =	15mm (½")
151 =	15mm (½")

3: Body Material (Wetted)

A: Al (Aluminium)
S: SUS (Stainless Steel)
G: PPG (Glass Filled PP)
P: PP (Pure Polypropylene)
V: PVDF (Polyvinylidene Fluoride "KYNAR")
T: PTFE (Fluoroplastics)
H: High Purity PTFE (Fluoroplastics)
D: POM (Ployoxymenthylene)
F: Fe (Cast Iron)
C: CF PP (Conductive Polypropylene)
E: CF PTFE (Conductive Fluoroplastics)

4: Diaphragm Materials

C: Neoprene™ (CR)
E: Nordel™ (EPDM)
N: Buna N (NBR)
H: Hytrel™ (TPE / TPEE)
S: Santoprene® (TPO)
V: Viton® (FPM / FKM)
T: PTFE

5: Connection Options

□: PT, Rc, BSPT
N: NPT
J: PT Air Supply, JIS / DIN Flange *
A: NPT Air Supply, ANSI Flange *
F: Ferrule (ISO/3A)
T: Tube

*Type 400, 500 and 800 metallic pumps come with threaded flange manifolds.

6: Specialty Options

□: Standard Pump
W: Flap Valve Pump
R: Clamped Pump

7: Air Motor Options

□: Spool Valve
M: Mechanical Coil Spring
A: Spool Valve with Aluminium Body (200 & 250 series only)
E: Electrical Type

8: Other Options

X: Other Opions
Other than standard pumps
TPO Backup Diaphragm, One-Up® PTFE Diaphragm, PTFE Ball Check Valves, PTFE Check Seats, SUS Ball Check Valves, SUS Check Seats, FDA Compliant Pump, 1½" Center Ports (250 metallic pump) Leak Sensor, Stroke Counter, High Pressure 2:1 Pump, Powder Pump, Split Manifold Pump and more...

The red characters above are non-standard productus.

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Notes; Options, Variations, Add On's and Accessories may not be available for all models sizes or materials. IWAKI stocks a full range of Pumps Parts and Accessories (Standard Stocked Items). Other models are classified as Order-only and stock may not be available. For information about the Line Up, Prices, Availability and Delivery please contact IWAKI or your Pump Distributor directly.

Note; factors affecting a pumps stated liquid flow rate, suction lift & solids handling capabilities include but are not limited to; pump size, diaphragm, ball valve & ball seat, type & materials of construction, air inlet pressure & air flow capability, liquid viscosity, specific gravity, slurry content, ambient & liquid temperature, liquid inlet & liquid outlet width, piping type, piping length & overall piping configuration.

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Notes:
Products & specifications contained within this catalogue may be changed without notice. Pumps listed are available in various and materials. For each application please take extreme care with pump choice and always consider factors such as chemical compatibility, solids size, abrasion resistance, temperature of the liquid, temperature of the surrounding atmosphere, airline or liquid line pressure etc. Always refer to MSDS and chemical compatibility charts or for more information about chemical compatibility. For more information on choosing the correct pump, please consult with your distributor or contact IWAKI directly. Note that products contained may be subject to international trade restrictions or embargoes and may require an export permit from the Japan Ministry of Economy and Industry (METI) prior to dispatch. For more information regarding international export control regulations please contact your distributor or IWAKI directly. For information regarding re-export please contact your local authorities directly. For information regarding CE & ATEX refer to the CE and ATEX certification available separately. Countries where patents were applied : Japan, China, Korea, USA, Italy, Denmark, France, Germany, Netherlands, Sweden, and England.

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